

tests must be conducted without failure.

(h) For rotorcraft having 30 or fewer passenger seats and having an exit threshold more than 6 feet above the ground, a rope or other assist means may be used in place of the slide specified in paragraph (f) of this section, provided an evacuation demonstration is accomplished as prescribed in § 29.803(d) or (e).

(i) If a rope, with its attachment, is used for compliance with paragraph (f), (g), or (h) of this section, it must—

(1) Withstand a 400-pound static load; and

(2) Attach to the fuselage structure at or above the top of the emergency exit opening, or at another approved location if the stowed rope would reduce the pilot's view in flight.

[Amdt. 29-3, 33 FR 968, Jan. 26, 1968, as amended by Amdt. 29-29, 54 FR 47321, Nov. 13, 1989; Amdt. 27-26, 55 FR 8004, Mar. 6, 1990]

§ 29.811 Emergency exit marking.

(a) Each passenger emergency exit, its means of access, and its means of opening must be conspicuously marked for the guidance of occupants using the exits in daylight or in the dark. Such markings must be designed to remain visible for rotorcraft equipped for overwater flights if the rotorcraft is capsized and the cabin is submerged.

(b) The identity and location of each passenger emergency exit must be recognizable from a distance equal to the width of the cabin.

(c) The location of each passenger emergency exit must be indicated by a sign visible to occupants approaching along the main passenger aisle. There must be a locating sign—

(1) Next to or above the aisle near each floor emergency exit, except that one sign may serve two exits if both exits can be seen readily from that sign; and

(2) On each bulkhead or divider that prevents fore and aft vision along the passenger cabin, to indicate emergency exits beyond and obscured by it, except that if this is not possible the sign may be placed at another appropriate location.

(d) Each passenger emergency exit marking and each locating sign must have white letters 1 inch high on a red

background 2 inches high, be self or electrically illuminated, and have a minimum luminescence (brightness) of at least 160 microlamberts. The colors may be reversed if this will increase the emergency illumination of the passenger compartment.

(e) The location of each passenger emergency exit operating handle and instructions for opening must be shown—

(1) For each emergency exit, by a marking on or near the exit that is readable from a distance of 30 inches; and

(2) For each Type I or Type II emergency exit with a locking mechanism released by rotary motion of the handle, by—

(i) A red arrow, with a shaft at least three-fourths inch wide and a head twice the width of the shaft, extending along at least 70 degrees of arc at a radius approximately equal to three-fourths of the handle length; and

(ii) The word “open” in red letters 1 inch high, placed horizontally near the head of the arrow.

(f) Each emergency exit, and its means of opening, must be marked on the outside of the rotorcraft. In addition, the following apply:

(1) There must be a 2-inch colored band outlining each passenger emergency exit, except small rotorcraft with a maximum weight of 12,500 pounds or less may have a 2-inch colored band outlining each exit release lever or device of passenger emergency exits which are normally used doors.

(2) Each outside marking, including the band, must have color contrast to be readily distinguishable from the surrounding fuselage surface. The contrast must be such that, if the reflectance of the darker color is 15 percent or less, the reflectance of the lighter color must be at least 45 percent. “Reflectance” is the ratio of the luminous flux reflected by a body to the luminous flux it receives. When the reflectance of the darker color is greater than 15 percent, at least a 30 percent difference between its reflectance and the reflectance of the lighter color must be provided.

(g) Exits marked as such, though in excess of the required number of exits,

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must meet the requirements for emergency exits of the particular type. Emergency exits need only be marked with the word “Exit.”

[Amdt. 29–3, 33 FR 968, Jan. 26, 1968, as amended by Amdt. 29–24, 49 FR 44438, Nov. 6, 1984; Amdt. 27–26, 55 FR 8004, Mar. 6, 1990; Amdt. 29–31, 55 FR 38967, Sept. 21, 1990]

§ 29.812 Emergency lighting.

For transport Category A rotorcraft, the following apply:

(a) A source of light with its power supply independent of the main lighting system must be installed to—

(1) Illuminate each passenger emergency exit marking and locating sign; and

(2) Provide enough general lighting in the passenger cabin so that the average illumination, when measured at 40-inch intervals at seat armrest height on the center line of the main passenger aisle, is at least 0.05 foot-candle.

(b) Exterior emergency lighting must be provided at each emergency exit. The illumination may not be less than 0.05 foot-candle (measured normal to the direction of incident light) for minimum width on the ground surface, with landing gear extended, equal to the width of the emergency exit where an evacuee is likely to make first contact with the ground outside the cabin. The exterior emergency lighting may be provided by either interior or exterior sources with light intensity measurements made with the emergency exits open.

(c) Each light required by paragraph (a) or (b) of this section must be operable manually from the cockpit station and from a point in the passenger compartment that is readily accessible. The cockpit control device must have an “on,” “off,” and “armed” position so that when turned on at the cockpit or passenger compartment station or when armed at the cockpit station, the emergency lights will either illuminate or remain illuminated upon interruption of the rotorcraft’s normal electric power.

(d) Any means required to assist the occupants in descending to the ground must be illuminated so that the erected assist means is visible from the rotorcraft.

(1) The assist means must be provided with an illumination of not less than 0.03 foot-candle (measured normal to the direction of the incident light) at the ground end of the erected assist means where an evacuee using the established escape route would normally make first contact with the ground, with the rotorcraft in each of the attitudes corresponding to the collapse of one or more legs of the landing gear.

(2) If the emergency lighting subsystem illuminating the assist means is independent of the rotorcraft’s main emergency lighting system, it—

(i) Must automatically be activated when the assist means is erected;

(ii) Must provide the illumination required by paragraph (d)(1); and

(iii) May not be adversely affected by stowage.

(e) The energy supply to each emergency lighting unit must provide the required level of illumination for at least 10 minutes at the critical ambient conditions after an emergency landing.

(f) If storage batteries are used as the energy supply for the emergency lighting system, they may be recharged from the rotorcraft’s main electrical power system provided the charging circuit is designed to preclude inadvertent battery discharge into charging circuit faults.

[Amdt. 29–24, 49 FR 44438, Nov. 6, 1984]

§ 29.813 Emergency exit access.

(a) Each passageway between passenger compartments, and each passageway leading to Type I and Type II emergency exits, must be—

(1) Unobstructed; and

(2) At least 20 inches wide.

(b) For each emergency exit covered by § 29.809(f), there must be enough space adjacent to that exit to allow a crewmember to assist in the evacuation of passengers without reducing the unobstructed width of the passageway below that required for that exit.

(c) There must be access from each aisle to each Type III and Type IV exit, and

(1) For rotorcraft that have a passenger seating configuration, excluding pilot seats, of 20 or more, the projected opening of the exit provided must not be obstructed by seats, berths, or other protrusions (including seatbacks in any